WE CLAIM:

1. A unitary hook fastener of a resiliently flexible, polymeric resin comprising a base film layer having generally parallel upper and lower major surfaces, with at least 50 spaced hook members per square centimeter projecting from the upper surface of said base, said hook members having a height from said upper surface of less than 1000 μm and each comprising a stem portion attached at one end to said base, and a head portion at the end of said stem portion opposite said base, at least the head portions having a thickness of from 50 to 200 μm in a first direction generally parallel to the surfaces of said backing.

2. The unitary hook fastener of claim 1 wherein said stem portion has a width in the range of 50 to 500 μm in a second direction generally at a right angle to said first direction and parallel to the surfaces of said backing; said head portion having a width greater than said stem portion and a total width of from 100 to 800 μm in said second direction and an arm droop of from 100 to 500 μm.

3. A unitary hook fastener according to claim 2 having in the range of 50 to 300 spaced hook members per square centimeter.

4. A unitary hook fastener according to claim 1 having in the range of 70 to 150 spaced hook members per square centimeter.

5. A unitary hook fastener according to claim 1 wherein said polymeric material is a thermoplastic resin and the hook head has rounded corners.

6. A unitary hook fastener according to claim 1 wherein said polymeric resin is a phase distinct blend of a first continuous phase of thermoplastic resin and a second distinct phase.

7. A unitary hook fastener according to claim 6 wherein said second distinct phase is a nonparticulate filler.

8. A unitary hook fastener according to claim 7 wherein said filler is a nonparticulate filler comprising from 20 to 50 percent by volume of the polymeric resin.

9. A unitary hook fastener according to claim 6 wherein said second phase is a gas.

10. A unitary hook fastener according to claim 6 wherein said second phase is a distinct incompatible polymer phase.

11. A unitary hook fastener according to claim 5 wherein said base has a generally uniform thickness between said upper and lower surfaces of between 30 to 200 μm.

12. A unitary hook fastener according to claim 11 wherein said polymeric material comprises polyethylene, polypropylene, polypropylene-polyethylene copolymers or blends thereof.

13. The unitary hook fastener according to claim 1 wherein at least the hook head portion has a molecular orientation of less than 10 percent.

14. The unitary hook fastener according to claim 13 wherein the hook member base portion adjacent the base has a molecular orientation of at least 10 percent.

15. The unitary hook fastener according to claim 13 wherein the base film layer has a degree of molecular orientation in at least one direction.

16. The unitary hook fastener according to claim 13 wherein the base film layer has a degree of molecular orientation in two directions.

17. The unitary hook fastener according to claim 2 wherein the hook portion thickness is less than a stem portion thickness below the hook portion.

18. The unitary hook fastener according to claim 2 wherein the hook portion thickness is substantially the same as the stem portion thickness below the hook portion.

19. The unitary hook fastener according to claim 17 wherein the hook portion has an arm extending past the stem portion the hook portion arm varies in thickness from a tip of the hook portion arm to a portion of the hook portion arm adjacent the stem.

20. A method of forming a unitary fastener comprising the steps of extruding a thermoplastic resin in a machine direction through a die plate having a continuous base portion cavity and one or more ridge cavities extending from the base portion cavity, the extrusion being sufficient to induce melt flow molecular orientation in the polymer flowing through at least the ridge cavities forming a base portion with ridges, forming projections from the thermoplastic resin extruded through the ridge cavities, and subsequently heat treating at least a portion of the solidified projections at a temperature and time sufficient to reduce the thickness of the projections.

21. The method of forming unitary fasteners of claim 20 wherein the projections are hook form projections having a stem portion and a head portion.

22. A method for forming unitary hook fastener according to claim 20 wherein the formed hooks are heated at a temperature and time sufficient to shrink at least a portion of the hook head portions of the hook portions by from 5 to 90 percent.

23. A method for forming unitary hook fastener according to claim 20 wherein the hook portions are formed by extruding continuous ridges having a profile of the hook element, on a base portion comprising a film cutting the ridges and subsequently stretching the base layer to separate the individual cut ridges into discrete hook portions.

24. A method for forming unitary hook fastener according to claim 22 wherein at least a portion of the hook head portions are shrunk by at least 30 percent.

25. A method for forming unitary hook fastener according to claim 23 wherein the continuous ridges are stretched in the direction of the ridges prior to cutting of the ridges.

26. The method for forming a unitary hook fastener according to claim 20 wherein the thermoplastic resin is a phase distinct blend of a first continuous phase of thermoplastic resin and a second distinct phase.

27. The method for forming a unitary hook fastener according to claim 20 wherein said second distinct phase is a nonparticulate filler.

28. The method for forming a unitary hook fastener according to claim 27 wherein said filler is a nonparticulate filler comprising from 20 to 50 percent by volume of the polymeric resin.

29. The method for forming a unitary hook fastener according to claim 20 wherein said second phase is a gas.

30. The method for forming a unitary hook fastener according to claim 20 wherein said second phase is a distinct incompatible polymer phase.

31. A fastener of a resiliently flexible, polymeric resin comprising a base having generally parallel upper and lower major surfaces, with spaced upstanding projections projecting from the upper surface of said base, wherein at least a portion of the projections at an upper portion have a molecular orientation of less than 10 percent and adjacent the base film have a molecular orientation of greater than 10 percent.

32. The fastener of claim 31 wherein a portion of the upstanding projections have a molecular orientation of greater than 10 percent.

33. The fastener of claim 31 wherein a portion of the upstanding projections have a molecular orientation of from 20 to 100 percent.

34. The fastener of claim 24 wherein the projections comprise hook members having a stem portion and a hook head portion where the hook members having a height from said upper surface of less than 5000 μm and each comprising a stem portion attached at one end to said base, and a head portion at the end of said stem portion opposite said base, at least the head portions having a thickness from 50 to 1500 μm, a first direction generally parallel to the surfaces of said backing.

35. A fastener according to claim 34 wherein said stem portion has a width in the range of 50 to 500 μm in a second direction generally at a right angle to said first direction and parallel to the surfaces of said backing; said head portion having a width greater than said stem portion and a total width of from 100 to 5000 μm in said second direction.

36. The fastener according to claim 35 wherein the hook members are provided at a density of at least 10 per square centimeter.

37. A fastener according to claim 34 having in the range of 20 to 300 spaced hook members per square centimeter.

38. A fastener according to claim 34 wherein said polymeric material is a thermoplastic resin.

39. A fastener according to claim 38 wherein said base has a generally uniform thickness between said upper and lower surfaces of between 30 to 200 μm.

40. A fastener according to claim 39 wherein said polymeric material comprises polyethylene, polypropylene, polypropylene-polyethylene copolymers or blends thereof.

41. A fastener according to claim 31 wherein the hook portion thickness is less than a stem portion thickness below the hook portion.

42. A fastener according to claim 31 wherein the hook portion thickness is substantially the same as the stem portion thickness below the hook portion.

43. A fastener according to claim 31 wherein the hook portion has an arm extending past the stem portion the hook portion arm varies in thickness from a tip of the hook portion arm to a portion of the hook portion arm adjacent the stem.

44. A fastener according to claim 31 wherein said polymeric resin is a phase distinct blend of a first continuous phase of thermoplastic resin and a second distinct phase.

45. A fastener according to claim 44 wherein said second distinct phase is a nonparticulate filler.

46. A fastener according to claim 45 wherein said filler is a nonparticulate filler comprising from 20 to 50 percent by volume of the polymeric resin.

47. A fastener according to claim 44 wherein said second phase is a gas.

48. A fastener according to claim 44 wherein said second phase is a distinct incompatible polymer phase.

49. A hook and loop fastener system of a unitary hook fastener and a low profile loop laminate, the unitary hook fastener comprising a base having generally parallel upper and lower major surfaces, with at least 50 spaced hook members per square centimeter projecting from the upper surface of said base, said hook members having a height from said upper surface of less than 1000 μm and each comprising a stem portion attached at one end to said base, and a head portion at the end of said stem portion opposite said base, the head portion having a thickness of from 60 to 180 μm and an arm droop of from 50 to 700 μm, the loop laminate comprising a fibrous loop web bonded to a

backing layer wherein the loop web has a thickness of from 100 to 300 microns and wherein the ratio of the arm droop to the loop web thickness is 1.5 or less.

50. A hook and loop fastener system of claim 49 wherein the head portion has a thickness of from 50 to 200 μm in a first direction generally parallel to the surface of said backing and the loop web is a nonwoven loop web formed of a nonwoven fibrous web having a thickness of from 100 to 300 microns.

51. The hook and loop fastener system of claim 50 wherein the backing layer is a film layer and the loop web is a nonwoven web point bonded to the film layer.

52. The hook and loop fastener system of claim 51 wherein the backing layer is a coextruded film layer having a bonding layer attached to said nonwoven fibrous web.

53. The hook and loop fastener system of claim 52 wherein the nonwoven web is spunbond nonwoven web.

54. The hook and loop fastener system of claim 50 wherein the ratio of arm droop to nonwoven web thickness is 1.3 or less.

55. The hook and loop fastener system of claim 50 wherein the ratio of arm droop to nonwoven web thickness is 1.0 or less.

56. The hook and loop fastener system of claim 50 wherein said stem portion has a width in the range of 50 to 500 μm in a second direction generally at a right angle to said first direction and parallel to the surfaces of said backing; said head portion having a width greater than said stem portion and a total width of from 100 to 800 μm in said second direction and an arm droop of from 100 to 500 μm.

57. The hook and loop fastener of claim 50 wherein the head portion thickness is from 60 to 80 μm.

58. A hook and loop fastener system of claim 50 wherein the head portion thickness is from 50 to 80 μm having in the range of 50 to 300 spaced hook members per square centimeter.

59. A hook and loop fastener system of claim 50 wherein said polymeric material is a thermoplastic resin and the hook head has rounded corners.

60. A hook and loop fastener system of claim 59 wherein said base has a generally uniform thickness between said upper and lower surfaces of between 30 to 200 μm.

61. A hook and loop fastener system of claim 60 wherein said polymeric material comprises polyethylene, polypropylene, polyethylene-polyethylene copolymers or blends thereof.

62. A hook and loop fastener system of claim 50 wherein at least the hook head portion has a molecular orientation of less than 10 percent.

63. A hook and loop fastener system of claim 62 wherein the hook member base portion adjacent the base has a molecular orientation of at least 10 percent.

64. A hook and loop fastener system of claim 50 wherein the hook portion thickness is less than a stem portion thickness below the hook portion.

65. A hook and loop fastener system of claim 50 wherein the hook portion thickness is substantially the same as the stem portion thickness below the hook portion.

66. A hook and loop fastener system of claim 64 wherein the hook portion has an arm extending past the stem portion the hook portion arm varies in thickness from a tip of the hook portion arm to a portion of the hook portion arm adjacent the stem.

67. A hook and loop fastener system of claim 49 wherein the system has a 135 degree peel force of greater than 120 g/2.5 cm.

68. A hook and loop fastener system of claim 49 wherein the system has a 135 degree peel force of greater than 200 g/2.5 cm.

69. A hook and loop fastener system of claim 49 wherein the hook and loop fastener system is on a garment.

70. A fastener strip of a resiliently flexible, thermoplastic resin comprising a base layer having generally parallel upper and lower major surfaces, with spaced upstanding integral polymeric projections projecting from the upper surface of said base, wherein the base layer has a substantially continuous thickness across its width and wherein at least a first portion of the projections on the upper surface have a thickness or molecular orientation, less than at least another second portion of the projections on the same upper surface.

71. The fastener strip of claim 70 wherein a portion of the upstanding projections have a molecular orientation of less than 10 percent.

72. The fastener strip of claim 71 wherein a portion of the upstanding projections have a molecular orientation different than another portion of the upstanding projection.

73. The fastener strip of claim 70 wherein the projections comprise hook members having a stem portion and a hook head portion where the hook members having a height from said upper surface of less than 5000 μm and each comprising a stem portion attached at one end to said base, and a head portion at the end of said stem portion opposite said base, at least the head portions having a thickness from 50 to 1500 μm, a first direction generally parallel to the surfaces of said backing.

74. A fastener strip according to claim 73 wherein said stem portion has a width in the range of 50 to 500 μm in a second direction generally at a right angle to said first direction and parallel to the surfaces of said backing; said head portion having a width greater than said stem portion and a total width of from 100 to 5000 μm in said second direction.

75. The fastener strip according to claim 74 wherein the hook members are provided at a density of at least 10 per square centimeter.

76. A fastener strip according to claim 72 wherein a portion of the upstanding projections have a molecular orientation of from 20 to 100 percent.

77. A diaper having a fastener strip of claim 70.

78. A disposable absorbent article comprising a fastener tab or patch formed of a thermoplastic resin comprising a base layer having generally parallel upper and lower major surfaces, with spaced upstanding integral polymeric projections projecting from the upper surface of said base, wherein the base layer has a substantially continuous thickness across its width and a degree of molecular orientation in more than one direction and wherein said upstanding polymeric projections have a density of less than 150 projections per square centimeter and the fastener tab or patch has a base layer thickness of less than 75 microns and an area of 10 cm^2 or greater.

79. A disposable absorbent article comprising a fastener tab or patch wherein the polymeric projections have a density of less than $60/cm^2$.

80. A disposable absorbent article comprising a fastener tab or patch wherein the polymeric projections have a density of less than $50/cm^2$.

81. A disposable absorbent article comprising a fastener tab or patch wherein the polymeric projections have a density of less than $150/cm^2$ wherein the fastener tab has an area of from 20 cm^2 to 100 cm^2 and the disposable absorbent article is a diaper.

82. A disposable absorbent article comprising a fastener tab or patch wherein the polymeric projections have a density of less than 150/cm^2 wherein the disposable absorbent article is a feminine hygiene article and the hook fastener is a patch forming all or part of the liquid impermeable backing attached to the garment.

83. The disposable absorbent article of claim 78 wherein said fastener tab or patch has said projections having a height from said upper surface of less than 1000 μm and each comprising a stem portion attached at one end to said base, and a head portion at the end of said stem portion opposite said base, at least the head portions having a thickness of from 50 to 200 μm in a first direction generally parallel to the surfaces of said backing.

84. The disposable absorbent article of claim 83 wherein said stem portion has a width in the range of 50 to 500 μm in a second direction generally at a right angle to said first direction and parallel to the surfaces of said backing; said head portion having a width greater than said stem portion and a total width of from 100 to 800 μm in said second direction and an arm droop of from 100 to 500 μm.

85. The disposable absorbent article of claim 83 wherein said polymeric material is a thermoplastic resin and the hook head has rounded corners.

86. The disposable absorbent article of claim 85 wherein said base has a generally uniform thickness between said upper and lower surfaces of between 30 to 200 μm.

87. The disposable absorbent article of claim 86 wherein said thermoplastic resin comprises polyethylene, polypropylene, polypropylene-polyethylene copolymers or blends thereof.

88. The disposable absorbent article of claim 83 wherein at least the hook head portion has a molecular orientation of less than 10 percent.

89. The disposable absorbent article of claim 88 wherein the hook member base portion adjacent the base has a molecular orientation of at least 10 percent.

90. The disposable absorbent article of claim 88 wherein the base film layer has a degree of molecular orientation in at least one direction.

91. The disposable absorbent article of claim 88 wherein the base film layer has a degree of molecular orientation in two directions.

92. The disposable absorbent article of claim 84 wherein the hook portion thickness is less than a stem portion thickness below the hook portion.

93. The disposable absorbent article of claim 84 wherein the hook portion thickness is substantially the same as the stem portion thickness below the hook portion.

94. The disposable absorbent article of claim 92 wherein the hook portion has an arm extending past the stem portion the hook portion arm increasing in thickness from a tip of the hook portion arm to a portion of the hook portion arm adjacent the stem.